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(54) **Elevating platform for use in the event of a fire**

(57) To assist in for evacuating a high rise building and fighting fires, one or more guide rails 10 with a rack 22 are permanently secured to the building. A separable platform 12 can be offered up to the guide rail 10 at its lower end and has a drive unit driving a pinion so as to be capable of climbing up and down the guide rail.

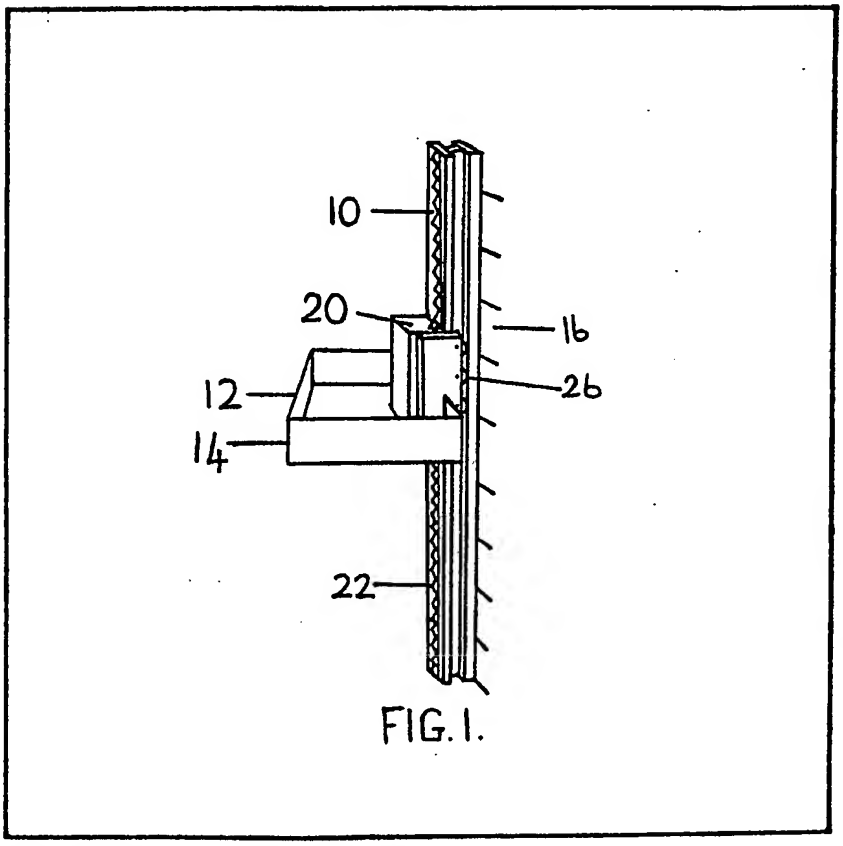

FIG. 1.

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The drawings originally filed were informal and the print here reproduced is taken from a later filed formal copy.

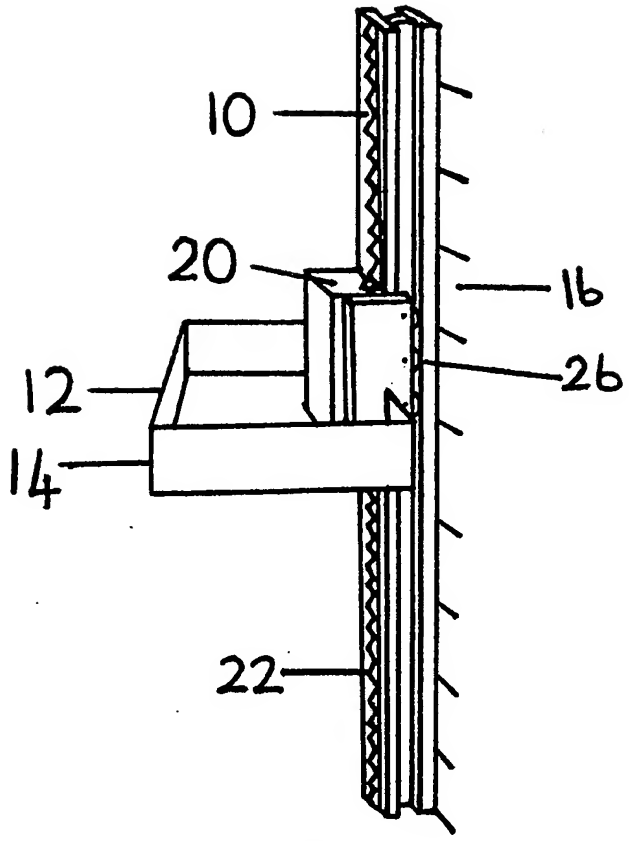

FIG. 1.

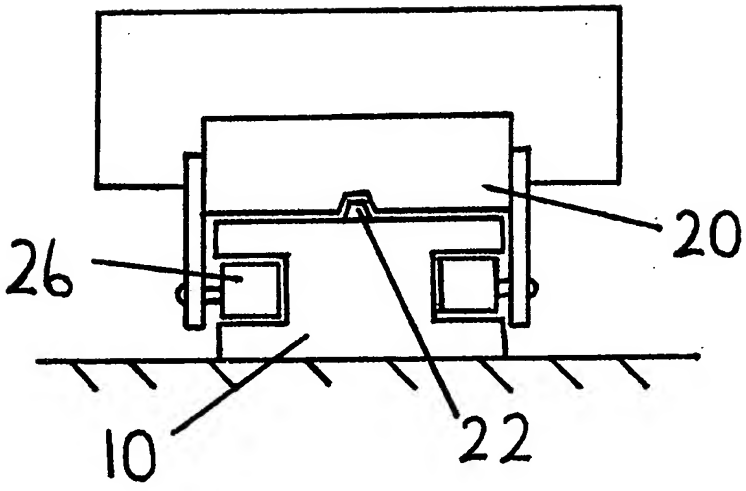

FIG. 2.

SPECIFICATION

Fire fighting system

The present invention relates to fire fighting systems intended in particular for use in multi-storey buildings.

The fact that high rise buildings present a serious fire hazard has long been appreciated. However, no fully satisfactory solution has yet been proposed to enable fire fighters to evacuate personnel from the building and to set about extinguishing the fire in safety.

A platform climbing an outer wall of the building is probably the safest and most convenient way of evacuating the building and fighting a fire. In this respect, it has already been suggested that a platform suspended from a helicopter or a maintenance platform suspended by cables from the roof of the building, be used for fire fighting. However, helicopters are both expensive and unsafe to use in an updraft while suspended maintenance platforms are costly to install, very slow in use and unstable. Furthermore, being powered by electricity from the building, suspended platforms are subject to the same dangers as elevators namely that they would be left stranded in the event of a power cut.

According to the present invention, there is provided a system for fighting fires in a multi-storey building which comprises at least one guide rail permanently secured to an outer wall of the building, and a separable self-propelling lift platform capable of propelling itself up and down the guide rail.

The guide rail may be installed during erection of the building but it can alternatively be fitted to an existing building. As each building is only required to have one or more guide rails the cost of installation and maintenance is not prohibitive.

The self propelling lift platform, on the other hand, would be an item of equipment owned and maintained by the local fire brigade. Thus, the equipment will always be in servicable condition, avoiding the need for constant maintenance of fire fighting equipment kept permanently on site.

It is advantageous that the lift platform in addition to being capable of propelling itself up the guide rail should be part of a mobile vehicle so as to be capable of reaching a fire quickly.

The guide rail may incorporate a rack for engaging a pinion driven by a prime mover mounted aboard the lift platform. The prime mover may be an electric motor but alternatively may be a fuel powered or compressed gas engine.

The guide rail should be secured to a part of the building where it will not be exposed to flames coming for example, out of a window. In order to be able to reach windows to fight fires and evacuate personnel, the platform conveniently has on its under side a retractable extension which may for example be hydraulically or mechanically powered.

The platform should itself for convenience, be built of a light weight material such as aluminium and may conveniently incorporate a wire mesh fence, to act as a guard. For safety the machinery aboard the platform should also be isolated by cover plates from the interior of the platform.

The use of a rail for guiding a platform is advantageous in that it does not present a security risk in that it cannot readily be used by a burglar. To prevent tampering with the guide rail, it is possible for the guide rail to terminate several feet above the ground so that the self propelled platform can be offered up to it from its lower end. This may, for example, by done by first jacking the platform up to the level where it engages the guide rail then allowing the platform to drive itself up to the required height on the building.

The invention will now be described further, by way of example, with reference to the accompanying drawings, in which:

Figure 1 is a schematic perspective view of a system in accordance with the invention, and

Figure 2 is a plan view from above of the platform shown in Figure 1.

In Figure 1 there is shown a guide rail 10 secured to an outer wall 16 of the building. The guide rail 10 is secured to a part capable of withstanding the strain and may be welded or bolted directly to support column such as a steel joist.

The guide rail 10 is provided in the illustrated embodiment with an integral rack 22 which engages with a pinion driven by a motor (not shown) mounted within an enclosure 20 aboard the mobile platform 12. Upon rotation of the motor, under controls provided aboard the platform 12, the latter may be propelled up and down the rack 22. The rail 10 is generally H-shaped in cross section and wheels 26 of the platform engage in the grooves on the opposite sides to guide and support the platform.

All about the platform 12 there is a wire mesh fence 14 provided for the purpose of protecting personnel.

It is seen that the rail is secured to a part of the building without windows and in order to enable access to the occupied parts of the building, a retractable extension (not shown) is secured to the underside of the platform 12 movable by means of a mechanical or hydraulic mechanism (not shown).

The motor aboard the platform 12 may be of any conventional type such as an electric motor, diesel engine or compressed gas motor. The platform additionally includes two braking systems, the first interlocking in the rack and the second employing friction pads directly engaging the guide rail. A centrifugal governor may also be provided to limit the speed of the motor.

The platform on reaching the ground fits aboard a mobile vehicle which incorporates jacks to raise the platform to the level necessary to engage the rail 10 and also to act as a buffer or damper for the platform as it descends. The vehicle may be in the form of a trailer or a self propelled vehicle.

Instead of having a buffering system aboard a

mobile vehicle, it is alternatively possible to install a buffering system permanently in the building beneath the rail 10. In order to prevent tampering, the buffering system may be installed under ground with a temporary cover which would be removed by the fire brigade after the lift platform is in position.

It will be appreciated that various modifications may be introduced into the system as described. For example, for additional stability, the lift platform may be supported on two guide rails instead of one. Furthermore, the method of climbing the rail may be other than by rack and pinion.

Claims

1. A fire fighting system comprises at least one guide rail permanently secured to an outer wall of the building and a separable lift platform capable of propelling itself up and down the guide rail.

2. A fire fighting system as claimed in Claim 1, wherein the guide rail incorporates a rack and the platform includes a prime mover driving a pinion engageable with the rack.

3. A fire fighting system as claimed in Claim 2, wherein the lift platform includes a braking system mechanically engagable with the rack or frictionally engaging the sides of the guide rail.

4. A fire fighting system as claimed in any preceding Claims, comprising a single H-shaped guide rail and wherein the lift platform includes guide wheels engaging in the grooves on opposite sides of the guide rail.

5. A fire fighting system for fighting fires substantially as hereinbefore described with reference to and as illustrated in the accompanying drawings.

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